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Study of heavy resins hydrocarbon composition for the pyrolisis of impulse nuclea-magnetic spectroscopy

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Abstract

One of the areas for an efficient use of large-tonnage and yet scarce binder as bitumen is a broad introduction of bitumen emulsions in water for road and civil construction. The technology of emulsified bitumen preparation, compared with traditional "hot" technologies and the introduction of petroleum solvents has a number of significant advantages. First of all, it is a power-saving technology that does not require heating of the components to high temperatures, which is directly related to the reduction of such combustion products as flue gas and solvent vapor emissions into the atmosphere. Bituminous Emulsion (BE) can be used with some wet mineral material at a reduced temperature that reduces the dependence of work production from weather conditions, thereby prolonging a construction season. The low viscosity of BE allows to distribute the binder material throughout the surface of the mineral materials, which leads to improved accuracy of dosing and the decrease of its flow rate. A high adhesiveness of BE, a layer formation rate and the ability to mechanize many processes as much as possible make Water-Bitumen Emulsions (WBE) the most technologically advanced type of an organic binding material. Petrochemicals are used during the solution of WBE production technology issues satisfying modern requirements. In this aspect, heavy resins of hydrocarbon pyrolisis which are a byproduct and need their rational use are interesting in some extent. The composition and physico-chemical properties of heavy resins of gasoline, ethane and propane-butane fractions pyrolisis produced as the multi tonnage waste at OJSC "Kazanorgsintez" (OTPS) and OJSC "Nizhnekamskneftekhim" (NTPS). Preliminary the samples were obtained at different sampling depth of light fractions by atmospheric distillation original TPS and, respectively, with different initial boiling point. Group hydrocarbon composition of the samples was determined by pulsed NMR1.

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Keywords

Bitumen emulsions, Complex structural units, Heavy pyrolysis resins, Hydrocarbon composition, Modification, Physical - chemical properties